



Michigan Emerging and Zoonotic Disease

# SURVEILLANCE SUMMARY

# 2020



Published August 2021



# Michigan Emerging and Zoonotic Disease SURVEILLANCE SUMMARY 2020

Prepared by the Michigan Department of Health and Human Services  
Bureau of Infectious Disease Prevention  
Emerging & Zoonotic Infectious Disease Section (EZID)

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**[www.michigan.gov/emergingdiseases](http://www.michigan.gov/emergingdiseases)**

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# INTRODUCTION

Zoonotic diseases are diseases that can be transmitted between animals and humans directly or through a vector (mosquitos, ticks, etc.). They can be caused by viruses, bacteria, parasites, and fungi. About 60% of infectious diseases in humans are transmitted from animals, and 75% of emerging infectious diseases are zoonotic. Other illnesses, such as those related to cyanotoxins produced by harmful algal blooms, are not zoonotic but affect both animals and humans through shared environmental exposures.

From West Nile Virus (WNV) to Lyme disease (LD), emerging zoonotic diseases in Michigan develop and are spread within complex cycles involving people, animals, vectors, and the environment. Thus, it is essential for healthcare providers, veterinarians, public health officials, and environmental scientists to work together in the identification, prevention, treatment, and control of disease. This collaborative initiative is known as One Health.

The Michigan Department of Health and Human Services (MDHHS) partners with federal, state, and local agencies, as well as public universities, to identify and define the geographic, environmental, and exposure risk of emerging diseases. MDHHS is also dedicated to providing stakeholders with information on emerging diseases and best practices for surveillance, prevention, and control, including the Emerging Diseases website ([www.michigan.gov/emergingdiseases](http://www.michigan.gov/emergingdiseases)) and quarterly One Health webinars.

This report provides a summary of epidemiologic information for select zoonotic, vector-borne, and One Health diseases in Michigan for 2020 and updates on special projects.

As with nearly everything in 2020, the global COVID-19 pandemic greatly affected the state's zoonotic disease surveillance efforts. From supply and staffing shortages to laboratory closures, the pandemic created many challenges. This report was compiled using the best available data, but readers should consider that 2020 surveillance data may not be comparable to past years.



# Zoonotic Diseases in Michigan

## 5 Year Table

Disease	2016	2017	2018	2019	2020*
<i>Bird-Associated</i>					
Psittacosis	2	0	4	0	2
<i>Livestock-Associated</i>					
Anthrax	0	0	0	0	0
Q Fever, acute	1	3	4	5	5
Q Fever, chronic	3	1	1	0	1
Swine Influenza	13	2	3	1	0
<i>Mosquito Borne</i>					
Dengue Fever	16	11	10	23	2
Encephalitis, California (La Crosse)	0	0	0	2	0
Encephalitis, Eastern Equine	2	0	1	10	4
Encephalitis, St. Louis	0	0	0	0	0
Encephalitis, Western Equine	0	0	0	0	0
Malaria	43	45	29	25	12
West Nile Virus	42	40	104	12	32
Yellow Fever	0	0	0	0	0
Zika	69	9	0	0	0
Jamestown Canyon Virus	0	0	2	1	3
<i>Multi-Mode Zoonoses</i>					
Brucellosis	2	1	4	1	3
Leptospirosis	5	4	1	3	2
Plague	0	0	0	0	0
Rickettsial disease - Typhus	1	0	0	0	0
Tularemia	1	0	1	0	0
<i>Public Health Pest</i>					
Head Lice (Aggregate School Reporting)	7956	7389	6557	9436	2577
<i>Rabies and Animal Bites</i>					
Rabies, Animal	42	39	76	58	56
Rabies, Human	0	0	0	0	0
<i>Rodent Borne</i>					
Hantavirus	1	0	0	0	0
Hantavirus, Other	0	0	0	0	0
Hantavirus, Pulmonary	0	0	0	0	0
<i>Tick Borne</i>					
Babesiosis, <i>Babesia microti</i>	2	3	3	1	0
Ehrlichiosis, <i>Anaplasma phagocytophilum</i>	7	15	14	12	17
Ehrlichiosis, <i>Ehrlichia chaffeensis</i>	8	4	7	5	1
Ehrlichiosis, <i>Ehrlichia ewingii</i>	0	0	0	0	0
Ehrlichiosis, human other/undetermined	0	0	0	0	0
Encephalitis, Powassan	0	0	0	0	0
Lyme Disease	228	291	262	404	451
Rickettsial Disease – Spotted Fever	12	13	16	10	4

\*Cases for 2020 are provisional, pending finalized review.

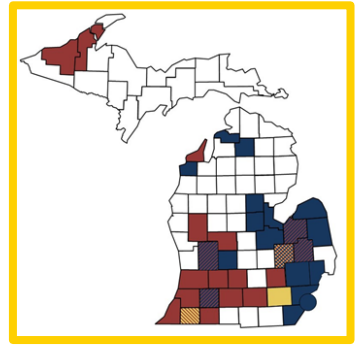
# ARBOVIRUSES

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**Arboviruses:** any group of viruses that are transmitted by  
mosquitos, ticks, or other arthropods.  
(Arthropod-Borne viruses)

# Activity

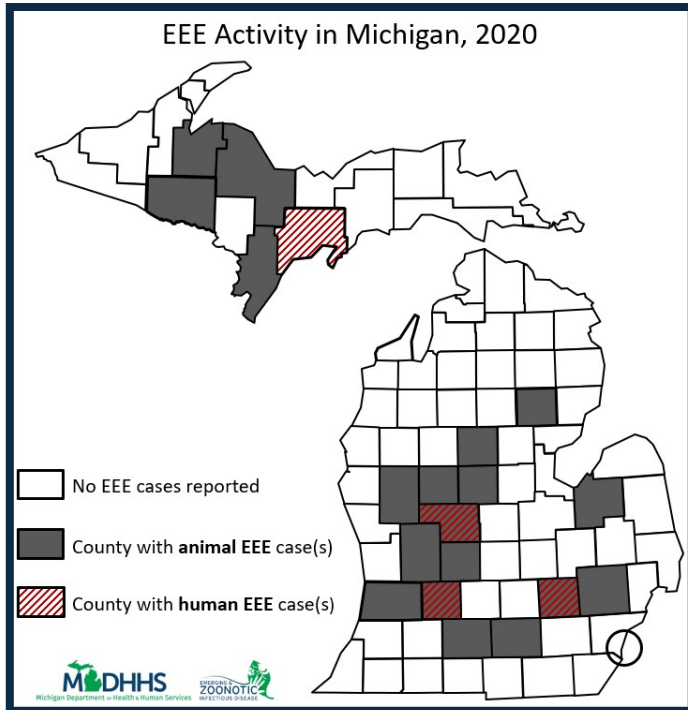


## 2019 Activity

## 2020 Michigan Arbovirus Snapshot

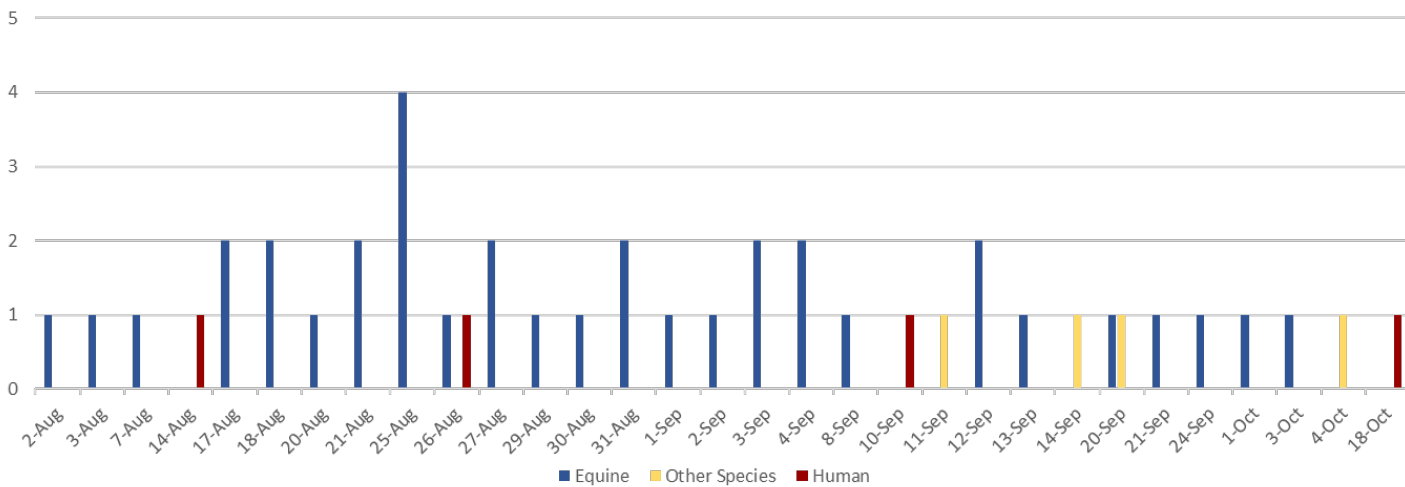
Human EEE cases	4
Human WNV cases	32
Human California Group Virus cases	3
WNV Asymptomatic viremic blood donors	2
Avian/other animal WNV cases	10
Animal EEE cases reported	41
WNV positive mosquito pools	74
Total number of mosquito pools tested	1,937
Total number of mosquitoes tested	15,969

# EEE





- 4 Human cases, 2 fatal
- 41 animal cases, including horses, deer and birds
- 20 counties (most in mid-MI)
- Onset dates: July 31-Oct. 18
- Surveillance effort impacted by COVID-19

2020 EEE Epidemiologic Curve-All Species





-  No human EEE cases reported for 2020
-  County with human EEE cases in 2020

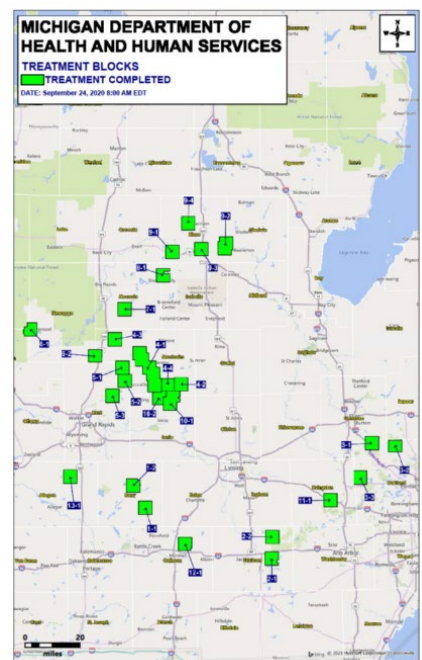
# EEE

## DECISION TO INITIATE AERIAL TREATMENTS-2020

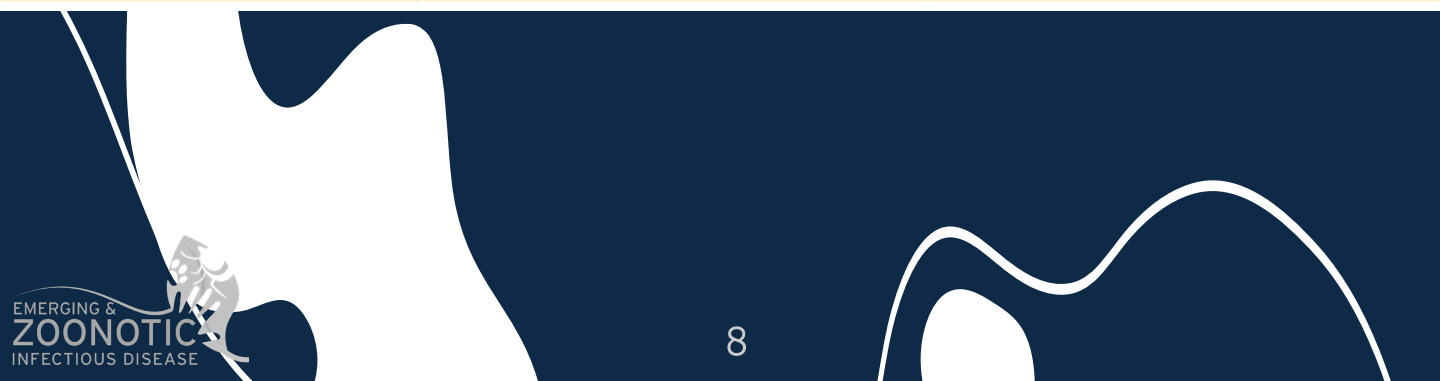
- By mid-Sept. 2020, Michigan had twice as many animal cases of EEE as we did in mid-Sept. 2019.
- The species of mosquito that transmits EEE was still being caught in traps
- MDHHS determined that a public health emergency existed
- Identified a contractor to perform treatments, obtained needed permits and waivers for pesticide (Merus 3.0) application
- Notified the public
- Michigan Department of Agriculture and Rural Development issued an emergency rule temporarily amending the rule for notification and participation for community pesticide applications for aerial treatment across affected counties

## TREATMENTS OCCURRED FROM 9/16-9/24/2020

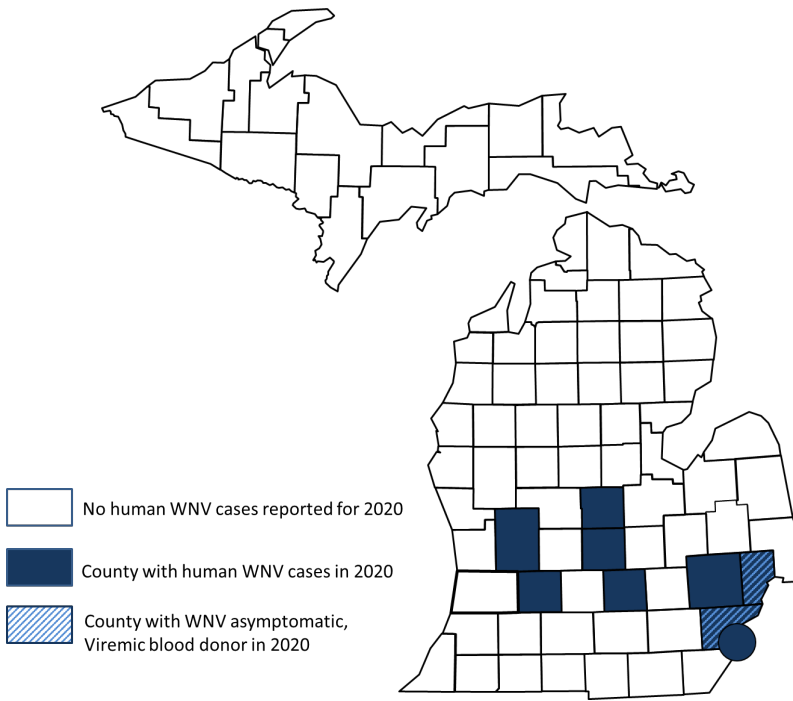
- Updated treatment maps daily based on weather conditions
- Daily calls with internal and external response partners
- Monitor weather for potential flight plan each day
- Alert local health of proposed treatment areas & product (Merus 3.0); put out daily press releases, updated website
- Monitored poison control, hospital data each day-no human illness reported
- No large-scale pollinator deaths were reported



Measures	2019	2020
# Counties Treated	14	17
# Acres Treated	557,000	462,000
Dates of Treatment	9/30-10/10/2019: 11 days	9/16-9/23/2020: 5 days

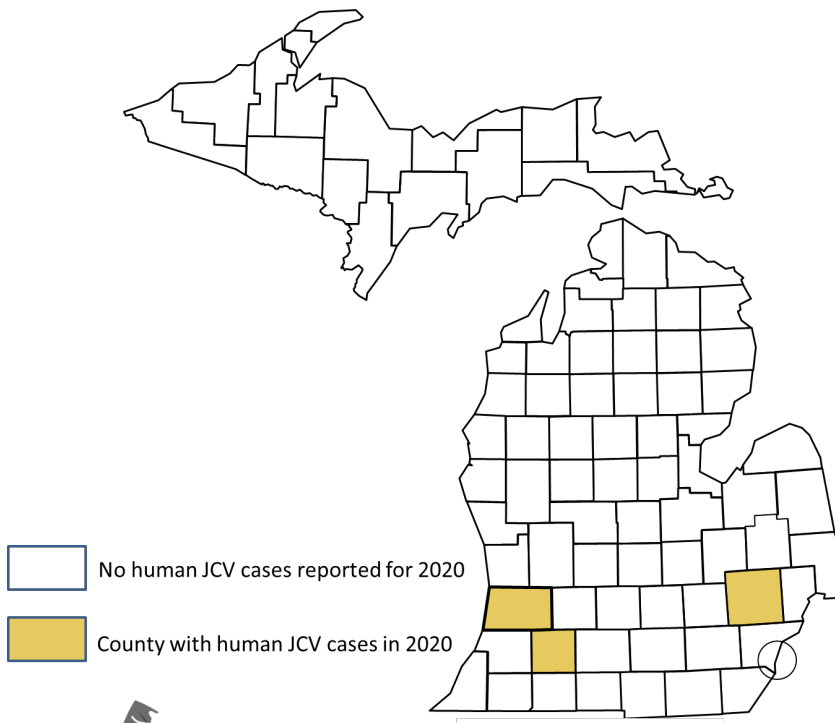


# West Nile Virus



- 32 cases; 27 confirmed, 5 probable
  - 1 death
- 29 WNV neuroinvasive disease, 3 WNV fever
- Age range: 5 yrs to 84 yrs
  - Median: 62 years
- 16 females, 16 males
- Onset dates: 8/12/20-9/27/20
- 2 asymptomatic viremic blood donors
  - Donation dates: 9/9/20-9/16/20

## California Group Viruses (LaCrosse Encephalitis virus, Jamestown Canyon virus)



- 3 confirmed Jamestown Canyon virus cases
- All with meningoencephalitis
- Age range: 19 yrs to 79 yrs
  - Median: 59 years
- 3 males
- Onset dates: 6/2/20-7/6/20

# Vector-Borne Disease Resources

MDHHS EZID produced training videos to 1) support LHDs conducting mosquito and tick surveillance and 2) develop capacity and expertise to respond to vector-borne disease threats at the local level.

## Mosquito and Tick Identification Refresher Training

2020 Tick and Mosquito Identification Refresher Training

### EXOTIC MOSQUITO SPECIES TO LOOK FOR: *Aedes albopictus*

Key  
DISTINGUISHING  
FEATURE: SINGLE  
WHITE STRIPE IN  
MIDDLE OF  
BLACK SCUTUM




Photo credit: CDC PHIL

*Ae. albopictus*  
Thorax: dorsal view  
WALTER REED BIOSYSTEMATICS UNIT

Photo credit: WRBU

MDHHS 3:35 / 23:47


## Identifying larval and nymphal Lone Star ticks

2020 Tick and Mosquito Identification Refresher Training – Lone Star tick supplement

### TIPS FOR IDENTIFYING NYMPHAL LSTS

4.0X MAGNIFICATION

1. IDENTIFY TO GENUS VIA LOCATION OF ANAL GROOVE RELATIVE TO ANUS & SHAPE OF PALPS
  - ZOOM IN AS MUCH AS POSSIBLE
  - ANAL GROOVE CAN BE FAINT—PLAY WITH LIGHTING/FOCUS
2. CHOOSE APPROPRIATE KEY TO FOLLOW
  - IN THIS CASE, THE KEY TO *AMBLYOMMA* NYMPHS BY KEIRANS & DURDEN (1998) WORKS WELL

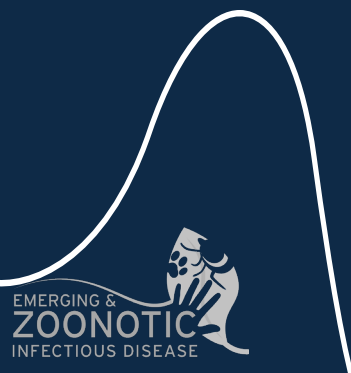


Long palps = *Amblyomma*

Anal groove behind anus = not *Ixodes*

Picture by Emily Deth, 2020

MDHHS 3:14 / 11:18



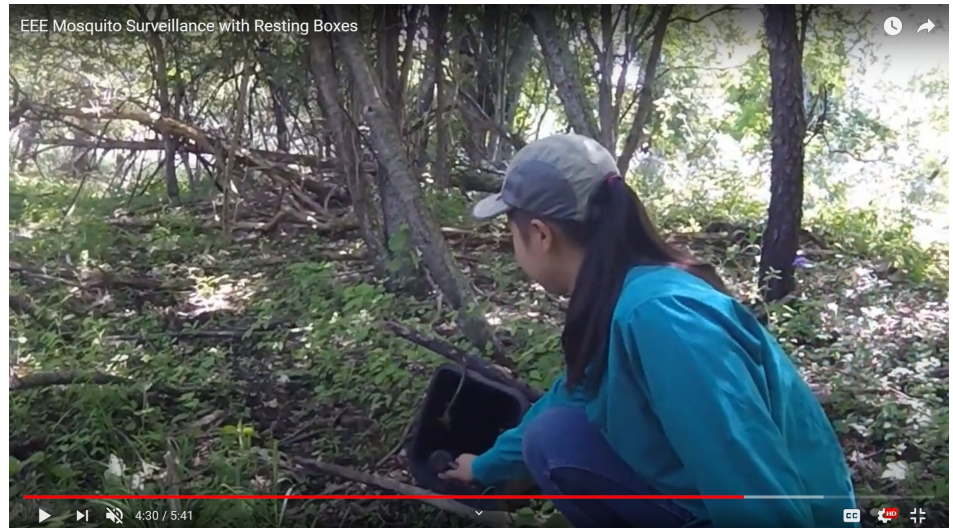


# Vector-Borne Disease Resources

## EEE Mosquito Vector Identification



## EEE Mosquito Surveillance with Resting Boxes



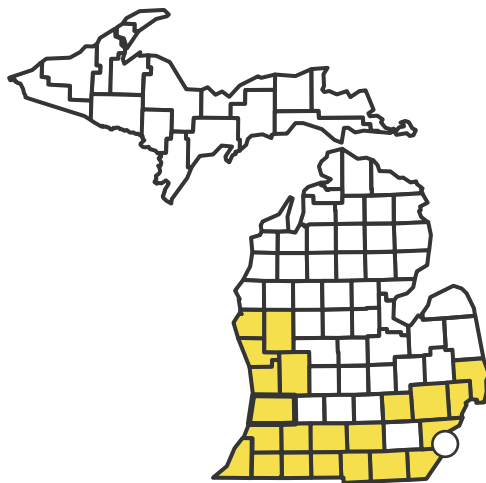
## EEE Mosquito Surveillance Site Selection Tips



# Vector-Borne Disease Surveillance

In the summer of 2020, MDHHS provided funding to eighteen of Michigan's local health jurisdictions (representing 22 counties) to participate in a Vector-Borne Disease Surveillance and Prevention Project. This project aims to initiate a surveillance system capable of identifying populations of potentially invasive mosquitoes and ticks, including *Aedes albopictus*, which can transmit emerging arboviruses such as Zika virus, and *Ixodes scapularis* (blacklegged ticks) capable of transmitting Lyme disease and other emerging pathogens. Jurisdictions can tailor their efforts to meet the needs of the community they serve. These jurisdictions are putting into practice the skills acquired through the Vector Biology Workshop to contribute to what is known about the presence and distribution of insects of public health importance in Michigan.

MDHHS, in coordination with local health departments, conducts surveillance to assess the geographic distribution of various mosquito species and to evaluate the risk of arboviral disease transmission in Michigan. Several types of traps are set throughout the state to collect mosquitos, which are identified and tested to determine if they are positive for any arboviruses (WNV and EEE mainly). Institutions such as the Michigan Mosquito Control Association, the Midwest Centers of Excellence, and Michigan State University also conduct mosquito surveillance.



## Mosquito Breeding Sites



Different mosquito species that transmit disease inhabit a variety of habitats

Left: sampling water in an industrial tire facility to detect larval invasive mosquitoes

Right: resting box in a wetland for Eastern equine encephalitis vector surveillance

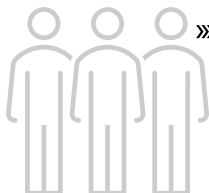


## Surveillance Efforts




# What Can Be Done?


## Everyone can....

- 
- » **Inform** yourself about where risk for contracting arboviruses is greatest (find up-to-date maps on the MDHHS MI Disease Mapper linked below)
  - » **Inform** yourself about when the risk for contracting arboviruses is greatest:
    - » Summer
    - » At dusk and dawn, mosquitoes are most active
    - » Adults > 50 years of age are more susceptible to serious illness from WNV and EEE
    - » Children <15 years of age are more susceptible to serious illness from EEE and La Crosse encephalitis virus
  - » **Eliminate** standing water where mosquitos can lay eggs
  - » **Report** dead birds to your local authorities
  - » **Protect.** Take precautions to prevent mosquito bites when engaging in outdoor activities

## Health Providers can....

- 
- » **Review** public health data regarding the risk of arboviruses in Michigan
  - » **Diagnose** and treat infections using best practices
    - » **Submit** samples for arbovirus panel testing to MDHHS Bureau of Laboratories
  - » **Report** cases promptly to your local health department
  - » **Remind** patients about the risk of arbovirus infection in your area and ways to prevent

## Public Health Agencies can....

- 
- » **Monitor** Michigan's mosquito populations
  - » **Maintain** a surveillance system for arboviral diseases
  - » **Make** Michigan data publicly available
  - » **Promote** arbovirus disease prevention guidance

## GUIDES AND PRINTED RESOURCES

Posters, pamphlets, and guides are available to download, print and order at:

[http://www.michigan.gov/documents/emergingdiseases/Publication\\_Order\\_Form\\_357623\\_7.pdf](http://www.michigan.gov/documents/emergingdiseases/Publication_Order_Form_357623_7.pdf)

MDHHS West Nile Virus Website:

[www.michigan.gov/westnile](http://www.michigan.gov/westnile)

MDHHS Eastern Equine Encephalitis website

[www.michigan.gov/eee](http://www.michigan.gov/eee)

MDHHS MI Disease Mapper

[www.michigan.gov/MIDiseaseMapper](http://www.michigan.gov/MIDiseaseMapper) MDHHS

Weekly Arbovirus summary

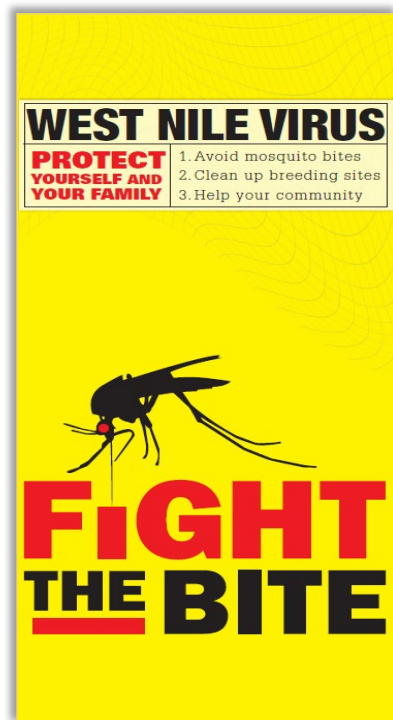
[https://www.michigan.gov/documents/emergingdiseases/Weekly\\_Arbovirus\\_Summary\\_698895\\_7.pdf](https://www.michigan.gov/documents/emergingdiseases/Weekly_Arbovirus_Summary_698895_7.pdf)

Centers for Disease Control and Prevention Arbovirus Websites:

[www.cdc.gov/westnile](http://www.cdc.gov/westnile)

[www.cdc.gov/jamestown-canyon](http://www.cdc.gov/jamestown-canyon)

[www.cdc.gov/EasternEquineEncephalitis](http://www.cdc.gov/EasternEquineEncephalitis)



# TICKBORNE DISEASES

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# LYME DISEASE

Lyme disease (LD) is the most commonly reported vector-borne disease in the United States; over 33,000 confirmed cases were reported nationally in 2019. In the U.S., cases tend to be geographically focused in the northeastern and north-central United States, but LD is also endemic and expanding in Michigan. Of the 451 total cases in 2020, 305 were locally acquired, 60 were travel related, and 86 were not able to be classified. Most exposures occurred in the Upper Peninsula and western Lower Peninsula. In 2020, COVID-19 case investigations took priority over LD across the state, resulting in less complete data.

The tick vector, *Ixodes scapularis* (blacklegged tick), is endemic in portions of the Upper Peninsula and the western Lower Peninsula. In addition, the distribution of the blacklegged tick is expanding into new areas across the state.

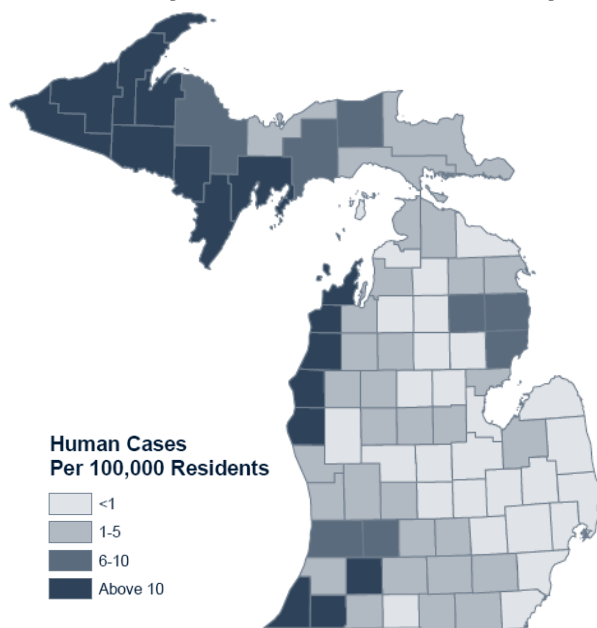
In 2020, MDHHS conducted human case surveillance and field ecologic surveillance for blacklegged ticks throughout the state with the help of its partners, including Michigan State University and sister state agencies. Educational materials will continue to be updated and made available to the public via the MDHHS Emerging Diseases website ([www.michigan.gov/emergingdiseases](http://www.michigan.gov/emergingdiseases)).

## 451



In 2020, 451 confirmed and probable human cases were reported, with most Michigan exposures occurring in the Upper Peninsula and western Lower Peninsula.

## 5-Year Lyme Disease Incidence by County of Residence, 2016-2020



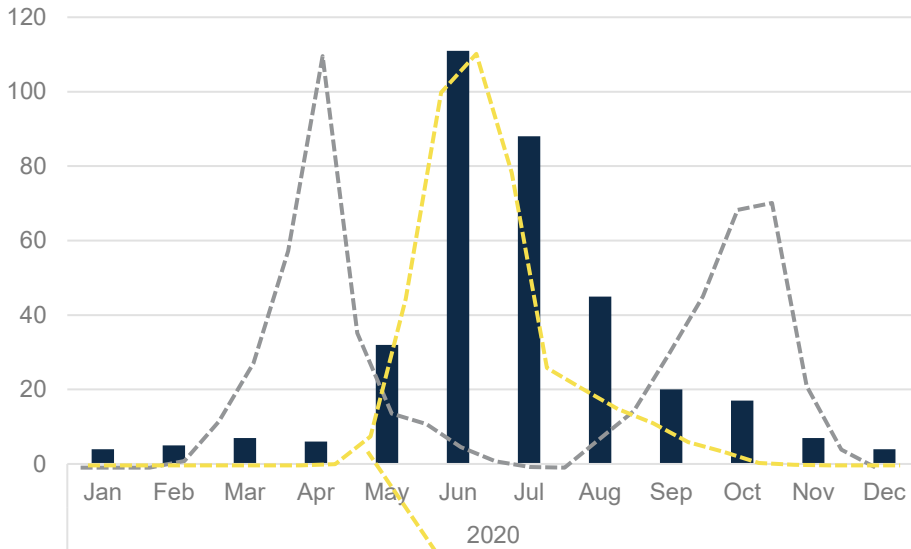
Map of the average number of human Lyme disease cases per 100,000 persons in each county from 2016 to 2020

### Highest Rates of Lyme Disease Incidence (per 100,000 residents)

Dickinson	145
Ontonagon	52
Menominee	52
Keweenaw	27
Iron	25



## Reported Lyme Disease Cases in Michigan: 2020



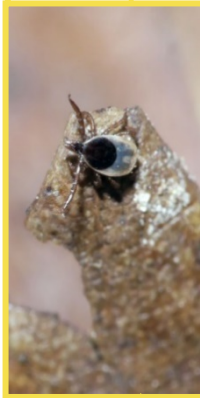
### Generalized blacklegged tick activity periods in Michigan:

----- Nymphs

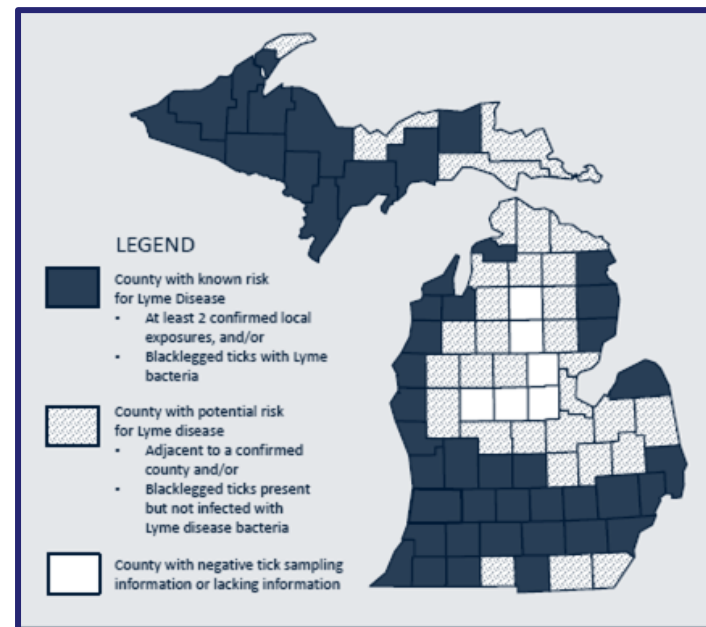
----- Adults

### Nymphs:

Peak transmission season for Lyme disease in Michigan (May through August) is associated with nymphal blacklegged ticks. Although the Lyme pathogen is more prevalent in adult ticks, bites from nymphs contribute more to Lyme disease transmission because nymphal ticks are smaller (about the size of a poppy seed). Nymphal ticks often escape notice long enough to attach to their human host and transmit the pathogen. Frequent tick checks are important during this time of year as prompt removal of ticks can prevent Lyme disease.



## Michigan Lyme Disease Risk Map: 2020



Map detailing the risk of Lyme disease in each county based on previously recorded presence of blacklegged ticks, presence of the Lyme disease bacterium, and confirmed local exposures

# STATEWIDE TICK SURVEILLANCE

In 2020...



**>421 km<sup>2</sup> (162.5 sq. mi.) sampled**

For the presence of blacklegged ticks (*Ixodes scapularis*) across 163 field sites



**2,871**

**blacklegged ticks**

collected from April through September



**2020 pathogen testing results pending**

at the CDC Vector-Borne Disease Laboratory in Ft. Collins, CO due to laboratory supplies shortages

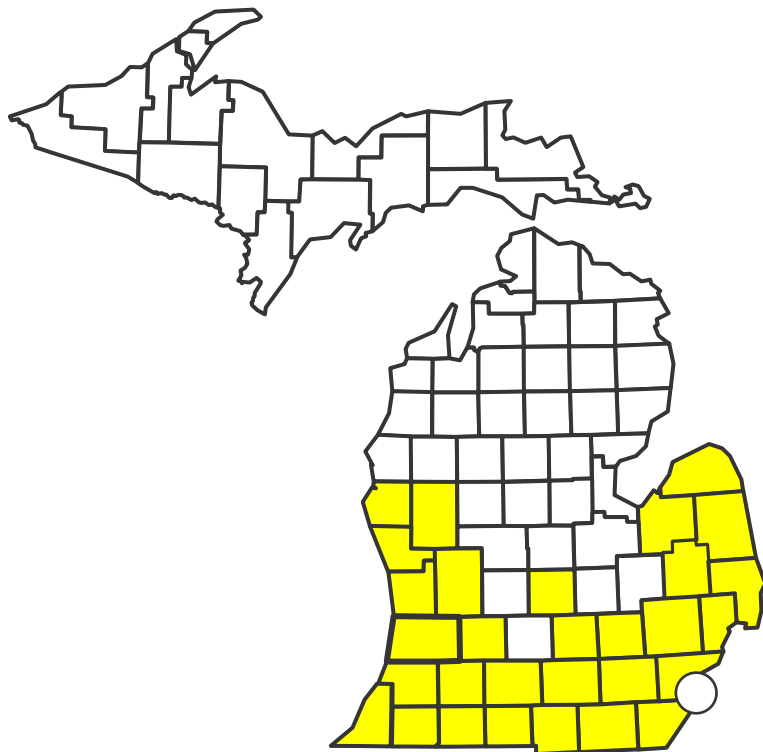


**In 2019**

**2,001 ticks were tested and 19% of those were positive** for Lyme disease-causing bacteria (*Borrelia burgdorferi*). Approximately 13% of nymphs and 32% of adults collected were positive for *Borrelia burgdorferi*. In addition, 1 nymph tested positive for *B. mayonii* and 4 nymphs and 3 adults tested positive for *B. miyamotoi*. Approximately 3% of the 2,001 ticks collected were positive for *Anaplasma phagocytophilum*.

Given that Michigan is an emerging Lyme disease state, increasing efforts to detect blacklegged tick populations and *B. burgdorferi* in the field is a priority. MDHHS and Michigan State University continued to conduct surveillance throughout the state in 2020. State surveillance was reduced compared to previous years due to COVID-19 related limitations.

## 2020 Field Sites



Tick surveillance using a drag cloth



Blacklegged Tick collected on a drag cloth

# Citizen Submission Tick Program

Since 2017, MDHHS has been receiving, identifying, and testing ticks sent in by Michigan citizens. MDHHS identifies the species of ticks submitted by the public and sends the results to the submitter. Some of the ticks are sent for additional testing\* to determine if they carry the Lyme disease bacterium. The program was expanded in 2018 to allow citizens to email a picture of their tick to [MDHHS-Bugs@michigan.gov](mailto:MDHHS-Bugs@michigan.gov). In 2019, 1,070 ticks were submitted via mail to MDHHS for identification and testing, and an additional 384 tick photos were submitted via email. In 2020, 599 ticks were submitted via mail and 492 ticks were submitted via email. The change in numbers is likely due to COVID-19 related factors.



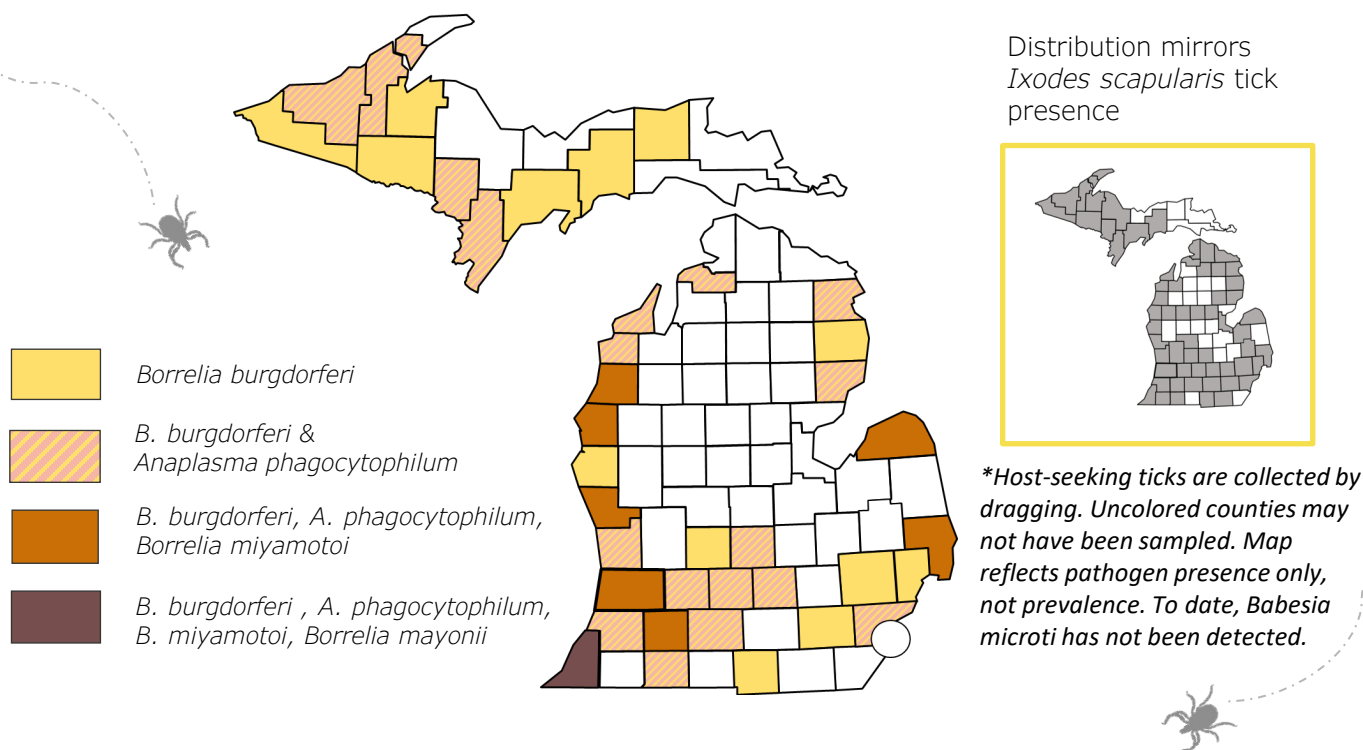
## 2020 Submitted Ticks by Number & Species

Tick Species	Number of Tick Photos Submitted	Number of Ticks Submitted	Identified in 2020
American Dog Tick ( <i>Dermacentor variabilis</i> )	339	316	655
Blacklegged Tick ( <i>Ixodes scapularis</i> )	150	273	423
Lonestar Tick ( <i>Amblyomma americanum</i> )	3	9	12
Rabbit Tick ( <i>Haemaphysalis leporispalustris</i> )	0	1	1
<b>Total</b>	<b>492</b>	<b>599</b>	<b>1,091</b>

\*As of April 1, 2020 ticks submitted for identification through this program will no longer be tested for the presence of pathogens.

# Other Tick-Borne Diseases

## Michigan Counties with Pathogen Positive Blacklegged Ticks, 2017-2019\*



Other tick-borne diseases have been identified in Michigan residents, which include:

Tick-borne Disease	2020 Cases in Reported Michigan	Transmitted by (Species):
Anaplasmosis	17	Blacklegged Tick
Ehrlichia chaffeensis*	1	Lone Star Tick
Rocky Mountain spotted fever*	5	American Dog Tick

\*In most cases, *Ehrlichia* and Rocky Mountain spotted fever were acquired while traveling out of state.



# What Can Be Done?

## Everyone can....

- » **Inform** yourself about where ticks can be encountered in Michigan
- » **Prevent** tick bites by using EPA registered repellents on skin and clothing
- » **Check** yourself and others for ticks regularly after spending time outdoors
- » **Remove** ticks promptly and safely if you have been bitten
- » **Submit** ticks you find on yourself or your pets for identification
- » **Recognize** the symptoms of Lyme disease
- » **Seek** prompt medical care if illness occurs after exposure to ticks

## Health Providers can....

- » **Review** public health data regarding the risk of Lyme disease in Michigan
- » **View** the Michigan Lyme disease webinar:  
<https://www.michigan.gov/lymeinfo>
- » **Diagnose** and treat infections using best practices
  - » **Submit** samples for Lyme disease testing to MDHHS Bureau of Laboratories
- » **Report** cases promptly to your local health department
- » **Remind** patients about the risk of Lyme disease in your area, and ways to prevent infections

## Public Health Agencies can....

- » **Monitor** Michigan's tick populations
- » **Maintain** Lyme disease surveillance system
- » **Offer** tick identification and testing services to the public
- » **Make** Michigan data publicly available
- » **Promote** tick-borne disease prevention guidance

## GUIDES AND PRINTED RESOURCES



Posters, pamphlets, tick submission kits, and guides are available to download, print and order via the Communicable Disease Division's publication order form at:  
[www.michigan.gov/cdinfo](http://www.michigan.gov/cdinfo)



# WATERBORNE DISEASES



Harmful Algal Bloom, Kent County  
*Photo credit: Jake Hunt, PLM Lake & Land Management Corp.*



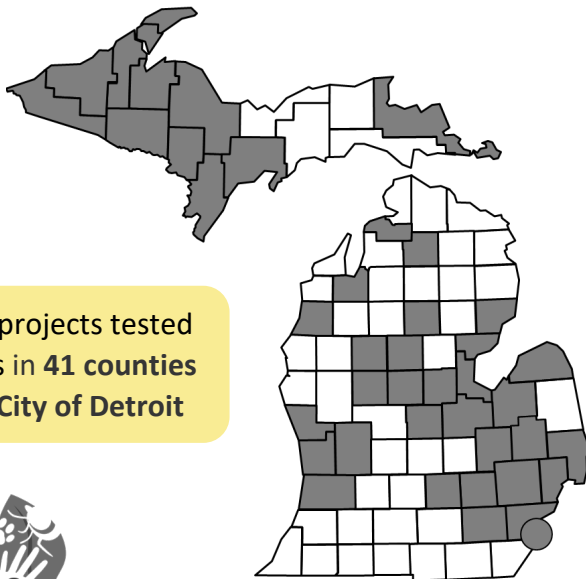
Wastewater sampling from  
Michigan State University – Dr. Rose's lab

# COVID-19 Wastewater Surveillance

Wastewater monitoring for SARS-CoV-2, the virus that causes COVID-19 disease, can provide an early indicator for presence of disease in the community and can be used to track trends over time. SARS-CoV-2 can be detected in wastewater up to seven days before infections lead to increases in clinical cases. This virus is shed in human feces for several weeks, including before people become ill and in individuals who are infected but not showing symptoms.

An increase in SARS-CoV-2 detected in wastewater can alert public health agencies of a potential surge in cases in a specific community and allow additional precautions to be put in place to prevent the spread of the virus.

In response to the COVID-19 pandemic, the State of Michigan conducted a COVID-19 wastewater surveillance feasibility [pilot project](#) in Fall 2020. MDHHS EZID staff worked on this project in partnership with EGLE, MSU, and an existing statewide laboratory network. Projects conducted community-level and congregate facility surveillance. Pilot project samples were tested from October – December 2020. Results can be viewed on the [Michigan COVID-19 Wastewater Dashboard](#).



## Pilot Project Highlights



**19 academic, local health department, and private labs** conducted wastewater testing.



**3,204 wastewater samples** were tested from April 5 – Dec. 30, 2020 and **62.5% were positive**.



**The positivity rate averaged 66.3%** across all sampling sites (Oct.1 – Dec. 30, 2020).



**Many sites had 100% of their samples test positive**, while a few sites did not experience any positive detections.

## Future Surveillance

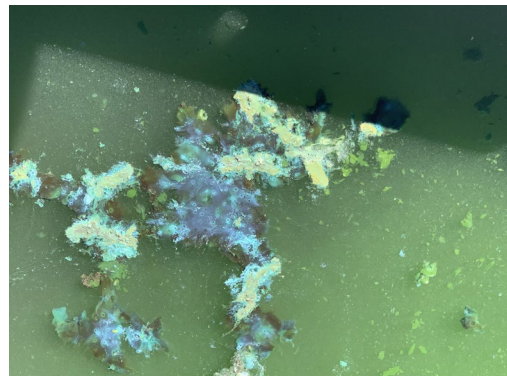
Based on the success of the pilot project, MDHHS will continue to support COVID-19 wastewater surveillance in Michigan through the surveillance network developed in the Fall 2020 pilot project. This project will run from June 1, 2021 through July 31, 2023.



# Harmful Algal Blooms

Cyanobacteria (also known as blue-green algae) can form blooms on water surfaces that are not visually pleasing, smell, and can interfere with recreational activities. Some cyanobacterial blooms produce cyanotoxins that can cause illness and even death in humans and animals; these are known as harmful algal blooms (HABs).

Globally, HABs are increasing in frequency and duration, with most researchers citing climate change, nutrient pollution, and invasive species as causes. Cyanobacteria usually “bloom” when water temperatures are warm, the water surface is calm, and sunlight is available. In Michigan, HABs usually occur in June through October. HABs can last for as little as one day or up to several weeks.



*Clumps of cyanobacteria, Lenawee County, August 2020. Photo credit: Sarah Gilmore, City of Tecumseh Parks & Recreation*

HABs can be a variety of colors and textures and can look like scum, spilled paint, foam, or discoloration of the water. Many are bright green with a “pea soup” appearance. Some blooms will turn light blue as they die off.

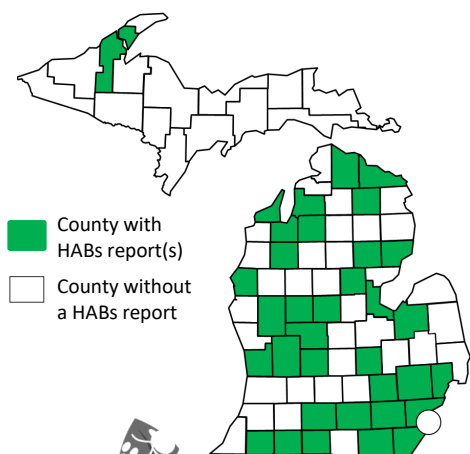
## Summary of 2020 Michigan Harmful Algal Bloom Events

# of waterbodies with complaints and/or investigations	128
# of these waterbodies with confirmed/suspected cyanobacterial blooms (HABs)	61
Suspected HABs <sup>1</sup>	20
Confirmed HABs <sup>2</sup>	41

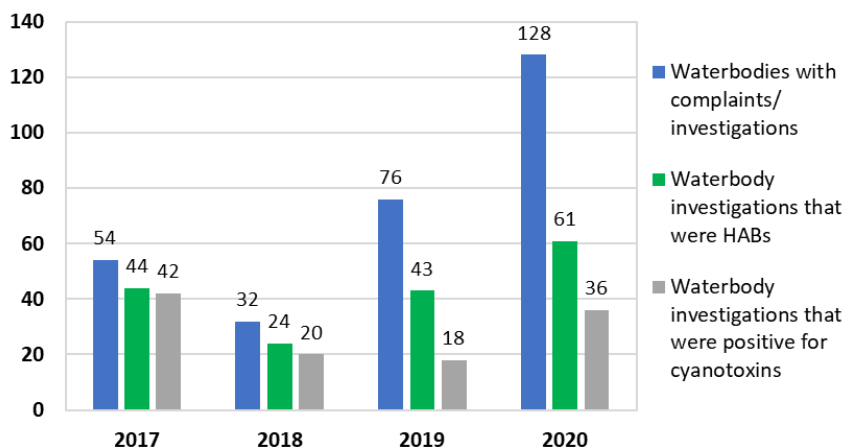
<sup>1</sup>Suspected: Images or site visit findings/measurements are consistent with cyanobacterial bloom and cyanotoxins not measured/detected.

<sup>2</sup>Confirmed: Laboratory detection of cyanotoxins/toxin-producing genes/cyanobacterial species known to produce toxins.

## Counties with Blooms in 2020 (n=35)



## Trends in Harmful Algal Bloom Events 2017-2020



# What Can Be Done?

## Everyone can....



- » **Know** what HABs do and do not look like (see previous page for examples).
- » **Report** suspect algae blooms or bloom-related illnesses to EGLE by calling 1-800-662-9278 or e-mailing [AlgaeBloom@Michigan.gov](mailto:AlgaeBloom@Michigan.gov). If available, pictures of suspected blooms are very helpful.
- » **Seek** medical care if you, your family, or your pet become sick after swimming or contact with algae.

## Health Providers can....



- » **Educate** yourself on symptoms ([www.cdc.gov/habs/pdf/habsphysician\\_card.pdf](http://www.cdc.gov/habs/pdf/habsphysician_card.pdf)) and ask patients about potential water exposures.
- » **Educate** patients about the risk of HABs.
- » **Report** any suspected HAB-related illnesses to your local health department and consult with state or local public health on cases that are uncertain.

## Veterinarians can....



- » **Educate** yourself about clinical presentations of HABs and ask clients about potential exposures.
- » **Educate** your clients about the risk of HABs.
- » **Collect** clinical specimens and conduct necropsies on suspected HAB cases.
- » **Report** HAB illness in pets and livestock to MDARD at 1-800-292-3939.

## Public Health Agencies can....



- » **Report** suspected algae blooms, or bloom-related illnesses to EGLE by calling 1-800-662-9278 or sending an e-mail to [AlgaeBloom@Michigan.gov](mailto:AlgaeBloom@Michigan.gov).
- » **Respond** to HABs by posting signage, issuing appropriate advisories, and providing information to community stakeholders.

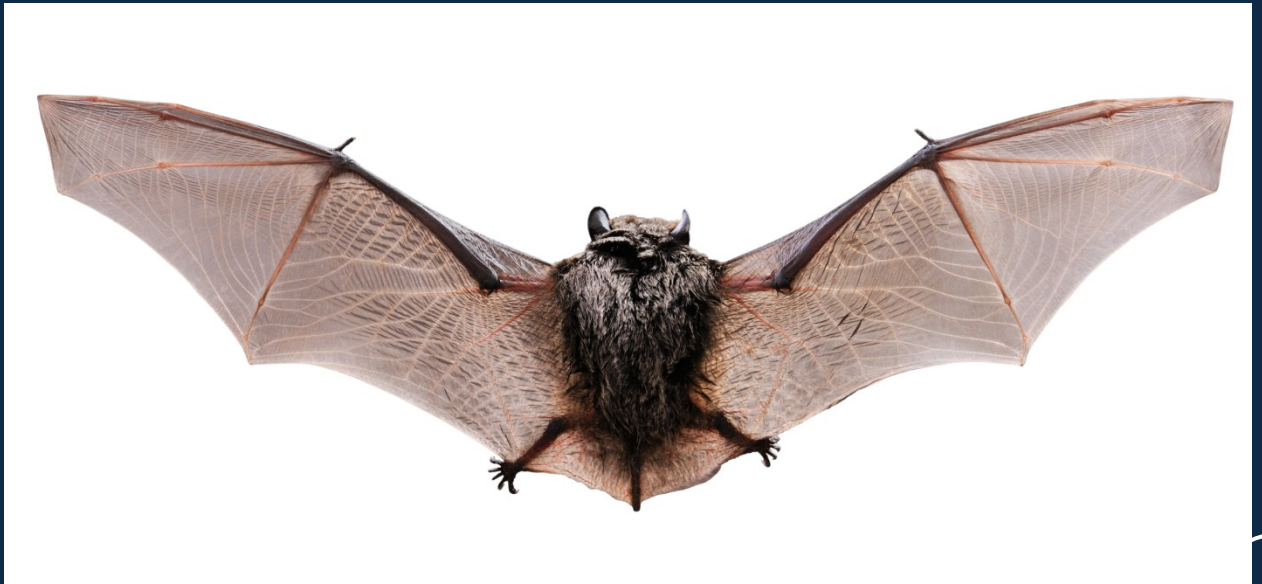
## RESOURCES

State of Michigan Harmful Algal Bloom website: [www.michigan.gov/habs](http://www.michigan.gov/habs)

Centers for Disease Control and Prevention's Harmful Algal Bloom-Associated Illness website: [www.cdc.gov/habs/](http://www.cdc.gov/habs/)

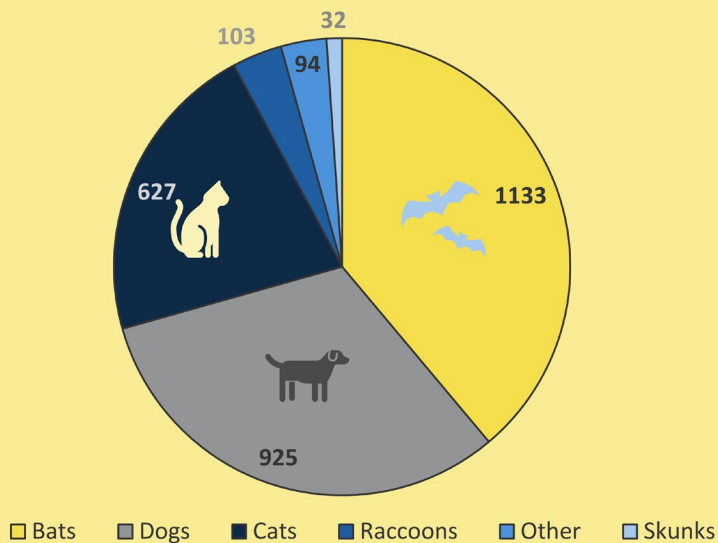
# RABIES

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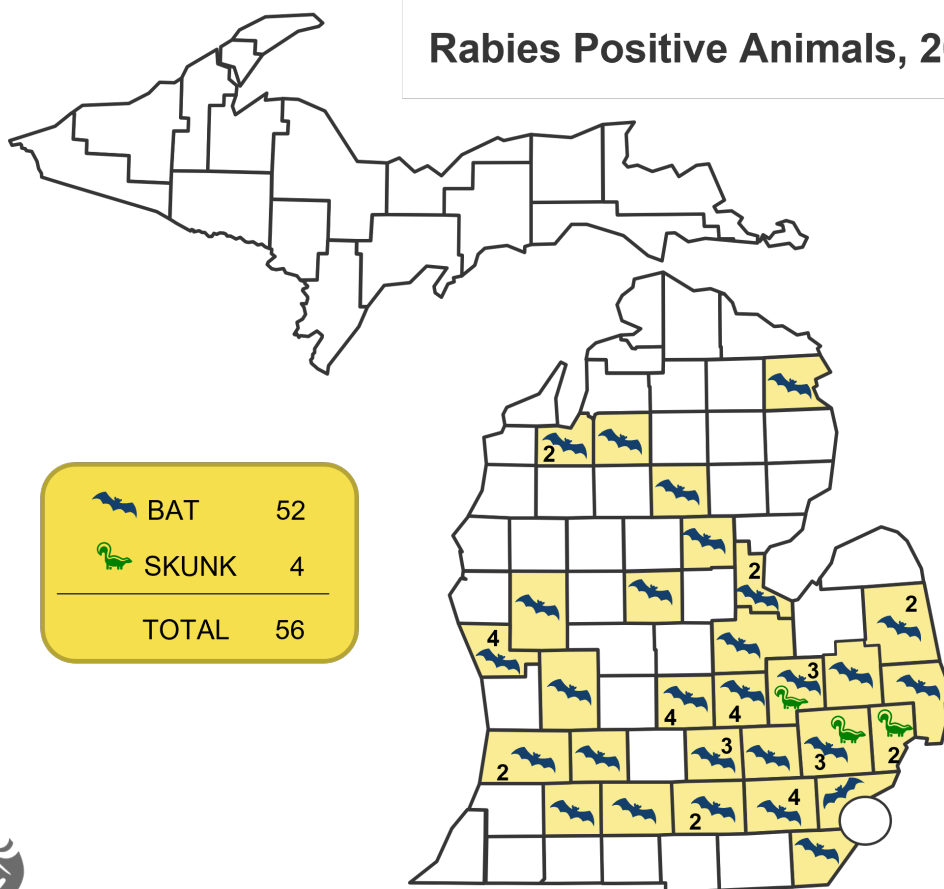


# 2020 Rabies Data

Animals Tested for Rabies at BOL in 2020

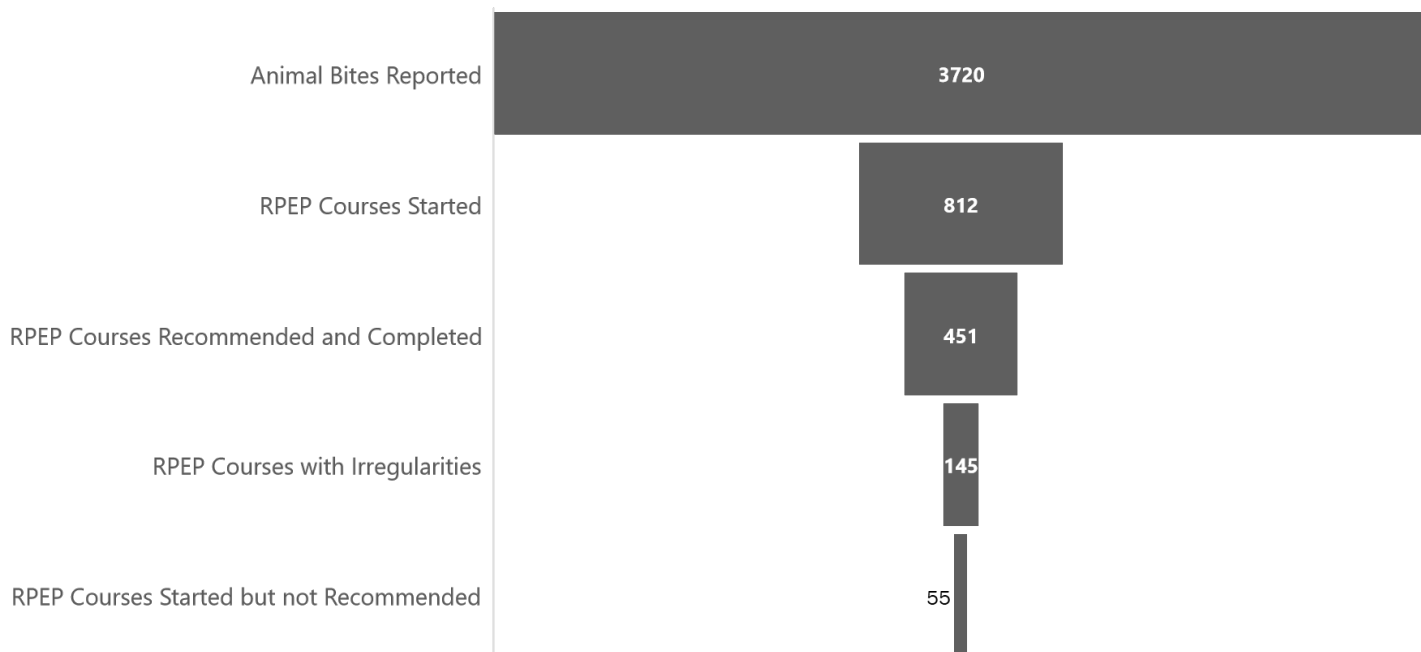


Rabies Positive Animals, 2020



# Animal Bites and Rabies Post-exposure Prophylaxis (RPEP)

## 2020 Animal Bites and Rabies PEP Courses



### RPEP Courses Recommended and Completed (n=451)

#### Wildlife

73% of Recommended RPEP

##### Bat Exposures (n=290)

- 250 not tested/untestable/escaped
- 25 rabies positive
- 15 rabies negative

##### Raccoon (n=22)

- All not tested/untestable/escaped

##### Other (n=16)

##### Unknown (n=2)

#### Domestic Animal

27% of recommended RPEP

##### Cat (n=54)

- 48 not tested/untestable/lost to follow-up

##### Dog (n=67)

- 58 not tested/untestable/lost to follow-up

# What Can Be Done?

## Everyone can....



- » **Vaccinate** your pets against rabies and keep them up to date
- » **Avoid** contact with wild or unfamiliar animals
- » **Know** what to do if you find a bat in your home (talk to your local health department before you let it go)
- » **Keep** a list of important phone numbers that includes animal control and your local health department
- » **Seek** prompt medical care if you are bitten by an animal

## Health Providers can....



- » **Report** animal bites to your local health department, and consult with state or local public health concerning cases that are uncertain
- » **Treat** potential exposures using (ACIP) best practices
- » **Report** Rabies Post-Exposure Prophylaxis administrations to your local health department.

## Veterinarians can....



- » **Vaccinate** pets and livestock against rabies
- » **Educate** your clients and the public about rabies prevention
- » **Ensure** your rabies titers remain at protective levels

## Public Health Agencies can....



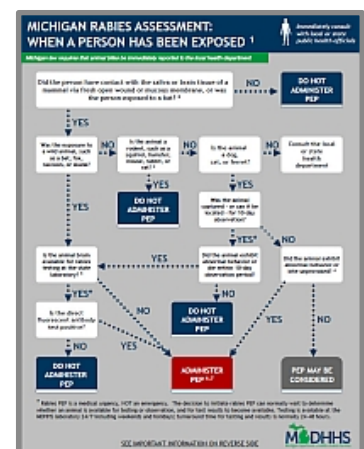
- » **Maintain** a rabies surveillance system
- » **Provide** rabies testing services to the public
- » **Provide** consultation to health care providers and the public
- » **Make** Michigan data publicly available
- » **Maintain** relationships with animal control and animal health organizations
- » **Promote** rabies prevention

## RESOURCES

MDHHS Rabies Flowcharts: [www.michigan.gov/rabies](http://www.michigan.gov/rabies)

MDHHS Poster: Rabies PEP Guidance for Healthcare Providers and Facilities: [www.michigan.gov/rabies](http://www.michigan.gov/rabies)

Communicable Disease Publication Order Form:  
[www.michigan.gov/cdinfo](http://www.michigan.gov/cdinfo)



# SPECIAL TOPICS

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# COVID-19 in Animals

## Mink Farms

- Mink farms in Michigan, Oregon, and Wisconsin as well as many other countries around the world have had outbreaks of COVID-19.
- COVID-19 has also been found in a wild mink in Utah.
- Mink are highly susceptible to infection and severe illness from COVID-19.



## Cat & Dog Testing

- Several pet cats and dogs have tested positive in the United States (none from Michigan).
- MSU VDL offers animal testing, but requires prior approval from MDARD and MDHHS.



## Zoos in the US

- Zoo animals (particularly big cats) have tested positive for COVID-19.
- Zoos in Michigan have taken steps to protect their animals from COVID-19, including social distancing, enhanced PPE use, and vaccination.



For more information, visit:

<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/one-health/sars-cov-2-animals-us>  
<https://www.cdc.gov/healthypets/covid-19/wildlife.html>



# Youth In Agriculture

Since 2014, the MDHHS Emerging & Zoonotic Infectious Disease Section (EZID) has been partnering with the Centers for Disease Control and Prevention, the Council of State and Territorial Epidemiologists, and the Michigan State University Extension to educate youth involved in agricultural programs about Zoonotic Diseases, with an emphasis on Swine Influenza. Other states have also been funded and the resources developed from this project can be found at <https://resources.cste.org/yia>.



# Michigan Emerging and Zoonotic Disease SURVEILLANCE SUMMARY 2020

Prepared by the Michigan Department of Health and Human Services  
Bureau of Infectious Disease Prevention  
Emerging & Zoonotic Infectious Disease Section (EZID)

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**[www.michigan.gov/emergingdiseases](http://www.michigan.gov/emergingdiseases)**